

Spring 2-1-2018

BIOB 170N.01 Principles of Biological Diversity

Kevin J. Murray

University of Montana, Missoula

Let us know how access to this document benefits you.

Follow this and additional works at: <https://scholarworks.umt.edu/syllabi>

Recommended Citation

Murray, Kevin J., "BIOB 170N.01 Principles of Biological Diversity" (2018). *Syllabi*. 7507.
<https://scholarworks.umt.edu/syllabi/7507>

This Syllabus is brought to you for free and open access by the Course Syllabi at ScholarWorks at University of Montana. It has been accepted for inclusion in Syllabi by an authorized administrator of ScholarWorks at University of Montana. For more information, please contact scholarworks@mso.umt.edu.

BIOB 170 Principles of Biological Diversity
Course Syllabus and Lecture Outline
Spring 2018

Professor: Dr. Kevin Murray

Office: NS 113; office hours 2 - 3 pm Mon - Wed

Contact information: phone 4495; email: kevin.murray@umontana.edu

Class meeting times: MWF, 1-2 pm; ULH

Required text:

Biology: Campbell et al. Biology. 10th or 11th ed.

Course scope and objectives.

The diversity in form and function encountered among living organisms is astounding. From a single cell, to a simple organism such as a jellyfish, to plants and ecological communities, living things exhibit a staggering hierarchy of complex organization. Nothing found in the abiotic world (non-living systems such water, rocks, stars and yes, even computers and other man-made machines) comes close to the complexity of even a single cell.

Biological diversity manifests on many levels. For instance, we may refer to the diversity in form and function of mammal fore-limbs, or the variety of organelles found in a eukaryotic cell, the number of species in an ecosystem or even the number of different ecosystems that make-up a biome. From a temporal perspective we should also note the diverse parade of living innovations represented in the evolutionary history of life on earth.

In BIOB 170 we cannot address all of the many levels of biological diversity on earth. Our focus will be instead on the major categories of living things, ranging from unicellular bacteria, to protists, plants, fungi and animals. We will strive to attain a complete picture of the mosaic of life on earth, and, importantly, how the pieces of this mosaic (major taxonomic groups) are related to one another. For instance, consider a small pond. Within even a relatively limited ecosystem such as a freshwater pond we could likely find representatives of all major forms of life earth: bacteria, protists, plants, fungi and animals, each represented in probably numerous forms (species). BIOB 170 will provide you with principles needed to understand many things about life in that pond as well as throughout the biosphere: What is a protist? How do protists differ from each other and from other organisms such as plants and animals? What makes an “animal” an animal? Are all green, photosynthetic organisms plants? And many more questions about life on earth.

Course Outcomes.

Upon completion of BIOB 170 students will have considered the origins of biological diversity, patterns of evolutionary diversification and structural/functional relationships among extant organisms. A primary general outcome of the course is to expose students to very complex sets of variously inter-related organisms wherein their capacity for careful observation and comparison is enhanced.

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students. If you have a disability that adversely affects your academic performance, and you have not already registered with Disability Services, please contact Disability Services in Lommasson Center 154 or 406.243.2243. I will work with you and Disability Services to provide an appropriate modification.

Grading.

There will be 3 regular session exams and a final exam. Exams are objective (true/false, multiple choice). Each regular session exam will be worth approximately 65 points. Your grade will be calculated as a percentage of total possible exam points. You will require SCANTRONS for lecture exams. Fundamentally, the following grading scheme will be used:

100 – 90% = A; 89.9 – 80% = B; 79.9 – 70% = C; 69.9 – 55% = D; < 55% = F

Classroom attendance, make-up exams, extra-credit.

Your participation in classroom discussions may affect your final grade; please attend class on a regular basis. Disruptive behavior such as talking or leaving lecture early is not acceptable. If you expect to leave class early, please tell Professor before class begins. Make-up exams will be permitted only with compelling and supported reasons. Make-up exams will take place one week after the scheduled exam, immediately after class (2:00 – 3:00 pm). Extra-credit assignments may be arranged only under exceptional circumstances; please contact Professor Murray for more information.

Lecture Notes.

Undoubtedly, the art of taking clear, concise lectures notes will be one of your most valuable skills as a University student and beyond. Therefore, come prepared to class with a dedicated notebook. Date your entries and strive to keep complete, organized lecture notes. Also, a proven method of learning is the re-writing of lecture notes. This will greatly assist your comprehension of the material.

BIOB 170 Lecture Topic Schedule Spring 2018

<u>Date</u>	<u>Topic</u>	<u>Text reference pages</u>
22 Jan	Course introduction	
24 Jan	Phylogenetics & systematics	546 – 550
26 Jan	Phylogenetics & systematics	
29 Jan	Prokaryotes: introduction	567 – 571
31 Jan	Prokaryotes: metabolism & diversity	575 – 580
02 Feb	Prokaryotes: ecological relationships	581 – 584
05 Feb	Prokaryotes: ecological relationships	
07 Feb	Prokaryotes cont	587 – 592
09 Feb	Protists: origins & intro	
12 Feb	Exam I	
14 Feb	Protist diversity 1	590 – 592
16 Feb	Protist diversity 2	593 – 595
19 Feb	no class	
21 Feb	Protist diversity 3	601 – 605
23 Feb	Protist diversity 4	606 – 610
26 Feb	Protist diversity 5	606 – 610
28 Feb	Protist cont.	606 – 610
02 Mar	Plant intro	613 - 615
05 Mar	Plant intro	613 - 615
07 Mar	Exam II	
09 Mar	Plants: seedless vascular	622 – 627
12 Mar	Plants: seedless vascular	
14 Mar	Plants: intro seed bearing	630 – 632
16 Mar	Plants: gymnosperms	633 – 636
19 Mar	Plants: gymnosperms	
21 Mar	Plants: angiosperms	638 – 640
23 Mar	Plants: angiosperms	640 – 646
26 Mar	Spring Break	
28 Mar	Spring Break	
30 Mar	Spring Break	

02 Apr	Fungi	648 – 650
04 Apr	Fungi	650 – 655
06 Apr	Exam III	
09 Apr	Animals: intro/classification	667 – 669
11 Apr	Animals: intro/classification	670 – 675
13 Apr	Animals: intro/classification	675 – 677
16 Apr	Animal diversity 1	680 – 685
18 Apr	Animal diversity 2	686 – 687
20 Apr	Animal diversity 3	688 – 692
23 Apr	Animal diversity 4	693 – 696
25 Apr	Animal diversity 5	697 – 698
27 Apr	Animal diversity 6	699 – 702
30 Apr	Animal diversity 7	702 – 704
02 May	Animal diversity 8	705 – 707
04 May	Animal diversity 9	707 – 710
08 May	Final exam (3:20 – 5:20 pm)	

